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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/781,953

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Atsushi Murakami

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01/15/2003

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EXAMINER

MILLER, PATRICK L

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/781,953

Applicant(s)

MURAKAMI ET AL.

Examiner

Patrick Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6,7 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,7,11,17 and 18 is/are rejected.
- 7) ☒ Claim(s) 2,6,10 and 12-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. In view of the Applicant's definition of the coefficient of water absorption, as disclosed in the "REMARKS" section of the amendment filed on November 1, 2002, the rejection of claims 1, 2, 5, and 9 under 35 U.S.C. 112, first paragraph is hereby withdrawn.
2. In view of the Applicant's argument that states the term "substantially" is commonly used in patent claims, as disclosed in the "REMARKS" section of the amendment filed on November 1, 2002, the rejection of claims 1, 2, 4-6, and 8-10 under 35 U.S.C. 112, second paragraph is hereby withdrawn.
3. Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 7, 11, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brenner (4,193,899) in view of Osanai (6,237,717).
 - With respect to claims 1 and 11, Brenner discloses a shape memory elastomer foam member that is used in the following manner: The member is compressed by heating, cooled while being kept compressed, released from the compressed state after cooling, and the original shape is recovered substantially by heating [Abstract].

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- Brenner does not disclose the shape memory polyurethane foam member having a coefficient of water absorption between the range $.01\text{g/cm}^3$ to $.2\text{g/cm}^3$ in a non-compressed state.
- Osanai discloses a foam member that has a $.125\text{g/cm}^3$ coefficient of water absorption. Specifically, Table 1, #2 begins with a foam density of $.1\text{ g/cm}^3$. Next, referring to Table 2, #2 has an increase of +25.3%, making the coefficient of water absorption $.125\text{ g/cm}^3$, which is within the disclosed range of $.01\text{g/cm}^3$ to $.2\text{g/cm}^3$. Osanai's motivation for providing a foam member with a $.125\text{g/cm}^3$ coefficient of water absorption is to prevent the foam from significantly retaining water, which provides the advantage of increasing the foam shape's density a smaller percentage than that of comparative examples (Comparing Tables 3 and 4). Further, one having ordinary skill in the art at the time of the invention would know that polyurethane is a polymer and an elastomer (disclosed by Brenner) is a polymer that exhibits properties of natural rubber.
- With respect to claims 3 and 7, Brenner does not disclose the shape memory foam member used on a surface of a soundproof cover that covers an engine.
- Osanai discloses foam members disposed on a surface of a soundproof cover that covers an engine (Fig. 1, #2). Osanai's motivation for providing such is to reduce undesirable transmission of noise from the engine. This provides the advantage of preventing undesirable noise from entering the passenger compartment (Col. 1, lines 16-24).
- With respect to claims 17 and 18, Brenner discloses heating the shape memory foam above a selected elevated temperature, but does not explicitly disclose the elevated temperature coming from engine heat. Brenner discloses the foam being heated to a

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temperature of 60°C-130°C (140°F-266°F) (Col. 12, lines 44-45). A person of ordinary skill in the art would know that an engine produces temperatures at and above this range and therefore could be the heat source needed to deform the shape memory foam of Brenner.

- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the shape memory foam of Brenner so that it exhibits characteristics of water repellency, wherein the coefficient of water absorption is .125g/cm³, which falls into the range of .01g/cm³ to .2g/cm³, thereby providing the advantage of increasing the foam shape's density by a smaller percentage, as taught by Osanai. Additionally, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the shape memory foam of Brenner so that it can be fitted to a soundproof cover that fits over an engine, and the engine provides the heat to recover the original shape of the foam member, thereby providing the advantage of preventing undesirable noise from entering the passenger compartment, as taught by Osanai.

Allowable Subject Matter

5. Claims 2, 6, 10, and 12-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
 - With respect to claims 2, 6, 10, and 12, the Prior Art discloses foam densities from near bulk density to less than .1g/cc (100kg/m³), but does not disclose a numerical value

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relating to bulk density or near bulk density. Therefore, the Prior Art does not disclose a foam with a bulk density less than 400kg/m^3 ,

Prior Art of Record

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Brenner (4,181,780) discloses foam densities from near bulk density to less than $.1\text{g/cc}$ (100kg/m^3) [Abstract].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 703-308-4931. The examiner can normally be reached on M-F, 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on 703-308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Patrick Miller
Examiner
Art Unit 2837

pm
January 8, 2003


ROBERT F. NAPPI
SUPERVISORY PATENT EXAMINER
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